



Fleet Manager

STEM Sims

Lesson 1: Miles per Gallon

The price of gasoline is one of the main factors that affect the costs of driving a vehicle. For a company with a large fleet of vehicles, a small rise in the price of fuel can result in much higher costs for the company. Higher costs often mean that the company will make less money. Can you find out a vehicle's fuel mileage? Get ready to have a gas.

Here are some definitions to help you in your investigation.

- Vehicle - a car, truck, or SUV
- Gasoline - a common fuel used in many vehicles. Gasoline is made by refining oil removed from the ground.
- Fuel - materials that are used to make heat or power
- Distance - how far something has moved
- Mileage - the number of miles moved
- Miles - a unit of measure of distance moved
- Fleet - a group of vehicles owned by a company
- Natural resource - materials and substances that occur in nature
- Limited resource - resources that can be used up in a short period of time and more of the resource cannot be easily made
- Unlimited resource - resources that cannot be used up in a short period of time
- Efficient - preventing the waste of a resource

Doing the Science

1. Start the Fleet Manager Simulation by clicking on the "Simulation" tab.
2. Select one of the vehicles in the fleet.
3. Select the "Use" button, then the "Drive" button. When the vehicle completes the route, select the "Status" button.
4. Record the Vehicle name, Total Distance Driven, and Fuel Used in Table 1.
5. Calculate and record in Table 1 the Miles per Gallon rating of the vehicle. To calculate the Miles per Gallon, divide the Total Distance Driven by the amount of Fuel Used.
6. Close the box by selecting the "X" in the upper right-hand corner, and then select the "Fleet" button.
7. Select a different vehicle and repeat steps 3-6. Test a total of five different vehicles.

Table 1.

Vehicle	Total Distance Driven (miles)	Fuel Used (gallons)	Miles per Gallon (mpg)

Do You Understand?

1. Is gasoline a limited or unlimited resource? Please support your answer with a reason.

2. The number of electric cars on the roads have increased over the past few years. Do you think the "fuel" for electric cars is a limited or unlimited resource? Please support your answer with a reason.

3. Do you think the number of electric cars on the roads will increase or decrease over the next few years? Please support your answer with a reason.

4. Name a resource that is unlimited. State why this resource is unlimited.

5. Which vehicle that you tested was the most fuel efficient? Please explain why you rated this vehicle as the most fuel efficient.

6. Why do you think most vehicles on the road today run on gasoline?

7. Find out the current average price of gasoline per gallon in your area. Based on this value, determine how much the fuel would have cost to complete the trip for the most fuel-efficient vehicle you stated in question #5. Please show the work for your calculation.